NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
FACT SHEET
FINAL PERMIT
December 22, 2008

Permittee Name:	Coyote Valley Band of Pomo Indians
Mailing Address:	P.O. Box 338, Calpella, CA 95418
Facility Location:	7751 North State Street, Redwood Valley, CA 95740
Contact Person(s):	John Feliz, Jr.,. Chairman (707) 485-8723
NPDES Permit No.:	CA0023355

I. STATUS OF PERMIT

The Coyote Valley Band of Pomo Indians (the "permittee") has applied for a new National Pollutant Discharge Elimination System ("NPDES") permit to allow the discharge of treated effluent from the Coyote Valley Reservation to Forsythe Creek, Tributary to the Russian River located on the Coyote Valley Reservation in Mendocino County, California. A complete application was submitted on November 26, 2007. EPA Region IX has developed this permit and fact sheet pursuant to Section 402 of the Clean Water Act, which requires point source dischargers to control the amount of pollutants that are discharged to waters of the United States through obtaining a NPDES permit.

This permit has been classified as a minor discharger.

II. GENERAL DESCRIPTION OF FACILITY

The facility is located about 7 miles north of Ukiah, California in Redwood Valley, Mendocino County. The Coyote Valley Band of Pomo Indians reservation is situated on the Russian River and Forsythe Creek near Highway 101. Currently, the site contains an existing casino, a community center, approximately 32 single-family residences, and supporting facilities.

The planned project includes the development of a new casino, hotel, and parking complex. A tribal Environmental Impact Report was completed in June, 2007 for the project. Accompanying the new facilities, the Tribe plans to construct a new wastewater treatment plant (WWTP) to service the casino, hotel, supporting facilities, community center, and single-family residences. No industrial sites will discharge to the WWTP.

The WWTP is anticipated to serve approximately 175 residents, 2500 daily guests, and 200 employees.

III. DESCRIPTION OF RECEIVING WATER

Discharge will be to Forsythe Creek, tributary to the Russian River. Forsythe Creek flows along the southwest border of the reservation until it reaches the Russian River about ½ mile from the discharge location.

The Forsythe Creek watershed presently contains steelhead trout (*Oncorhynchus mykiss)* which is listed as a threatened species under the federal Endangered Species Act. The Russian River provides habitat for coho salmon and steelhead trout, which are listed as a threatened species under the federal Endangered Species Act.

The Forsythe Creek Hydrologic Sub Area and the Russian River at the upper Russian River Hydrological Area are currently listed in California's 2002 CWA Section for 303(d) List of Water Quality Limited Segment (approved by EPA July 2003) for sediment/siltation and temperature. TMDLs have not been developed yet for these impairments; the TMDL priority for sediment/siltation is medium, and the TMDL priority for temperature is low.

The Tribe provided background water quality data for Forsythe Creek from a sampling analysis conducted on July 27, 2007. Samples were grab samples taken 300 feet upstream of the proposed discharge point and 150 feet downstream of the proposed discharge point.

Parameter	**Upstream**	**Downstream**
Ammonia	< 0.5 mg/L	< 0.5 mg/L
BOD	< 5 mg/L	< 5 mg/L
pH	8.2	8.6
Specific Conductance (EC)	330 umhos/cm	330 umhos/cm
Total Dissolved Solids	210 mg/L	210 mg/L
Total Suspended Solids	2.7 mg/L	< 1 mg/L
Nitrate	1.3 mg/L	< 1 mg/L
Total Coliform	> 1600 MPN/100 mL	130 MPN/100 mL
Fecal Coliform	< 2 MPN/100 mL	4 MPN/100 mL

IV. DESCRIPTION OF DISCHARGE

Currently, wastewater from the existing casino, community center, supporting facilities and 32 single-family residences is disposed of via septic tanks and leachfields.

The constructed WWTP is anticipated to have an average daily flow of 45,000 gpd at projected use levels. However, the projected flows at a casino facility may differ significantly from weekday to weekend due to usage, and the facility projects a maximum daily flow 60,000 gpd, with a peak treatment capacity of 75,000 gpd. The Tribe anticipates a future expansion (called "Phase II"), where the WWTP will be expanded to treat an average daily flow of 90,000 gpd.

According to the permit application, the treatment system will be designed to remove 99% of BOD and TSS, 75% of Phosphorus and 90% of Nitrogen and achieve the following effluent concentrations:

Parameter	Projected Effluent
TSS	< 5 mg/L
Turbidity	< 0.2 NTU
Coliform	<2.2 MPN/1000 ml

The WWTP will utilize a Membrane Bioreactor (MBR) system to produce high quality, tertiary disinfected effluent.

The WWTP treatment process will generally include:

- Headworks
- Immersed Membrane Bioreactors (MBRs)
- UV Disinfection

The raw influent will be pumped by the collection system pump station through the headworks facility. The headworks for the wastewater treatment plant would typically include influent flow measurement and fine screening.

Influent will be routed to a headworks influent box for distribution to two influent channels. During normal operation, one channel will be in service, with the other available as a standby. Within the channels bar screens will remove large materials from the raw influent.

The MBR treatment process is a tertiary treatment process utilizing membrane filters immersed in an aeration basin. A typical MBR system consists of an anoxic tank for denitrification of the plant influent, followed by an aeration tank for oxidation of organic matter and nitrification. The membrane cartridges would be immersed in the mixed liquor of a third chamber at the downstream end of the MBR. The membranes have a pore size in the sub-micron range, and are able to filter out most of the coliform bacteria and solids. Water is drawn through the membranes by blowers, which create a slight vacuum to force the permeate into the center of the strand-shaped membranes. Solids are left in the membrane tank for recirculation to the anoxic zone and/or wasting to solids handling.

Disinfection will be provided for both a surface water discharge and on-site reuse by constructing an in-line ultraviolet (UV) disinfection system. This provides disinfection of the tertiary effluent in an enclosed area by using UV light. Chlorine would be added at a location downstream of the UV disinfection facilities, and before recycled water is pumped to the recycled water storage tank. To prevent regrowth of bacteria in the recycled water distribution system, sodium hypochlorite is typically added in small quantities. The introduction of this chemical creates a residual concentration of chlorine that persists in the recycled water to prevent regrowth in the distribution system.

Treated effluent will be disposed of through one of four methods. First, treated wastewater will be used for on-site irrigation of approximately 0.75 acres. Second, all toilets and urinals at the casino and the hotel will utilize recycled effluent. Third, the Tribe will construct leachfields on 2.3 acres some of which is under proposed parking lots for subsurface discharge. During Phase II, the acreage for irrigation and leach fields will increase to 1 acre and 4.8 acres, respectively. The leachfields are subject to regulation under EPA's Underground Injection Program, and are subject to the inventory requirements of the Class V program.

Lastly, the Tribe will discharge to Forsythe Creek under the authority of the NPDES permit. The Tribe will optimize all on-site disposal methods and will discharge only treated wastewater that cannot be utilized through other methods.

According to the TEIR, the Tribe will construct a detention basin for stormwater runoff that will be adequately sized to ensure post-construction stormwater runoff rates do not exceed pre-construction rates.

V. SIGNIFICANT CHANGES TO PREVIOUS PERMIT

This is a new permit and therefore there was no previous permit. Currently, all wastewater is discharged on-site through septic tanks and leach fields.

VI. DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

EPA has developed effluent limitations and monitoring requirements in the permit based on an evaluation of the technology used to treat the pollutant (e.g., "technology-based effluent limits") and the water quality standards applicable to the receiving water (e.g., "water quality-based effluent limits"). EPA has established the most stringent of applicable technology-based or water-quality based standards in the proposed permit, as described below.

A. Applicable Technology-based Effluent Limitations

Publicly Owned Wastewater Treatment Systems (POTWs)

EPA developed technology-based treatment standards for municipal wastewater treatment plants in accordance with Section 301(b)(1)(B) of the Clean Water Act. The minimum levels of effluent quality attainable by secondary treatment for Biochemical Oxygen Demand (BOD_5), Total Suspended Solids (TSS), and pH, as defined in 40 CFR 133.102, are listed below and are incorporated into the permit:

Concentration Based Effluent Limits			
	30-day Average	7-day Average	Removal Efficiency

BOD_5	30 mg/l	45 mg/l	85 % minimum
TSS	30 mg/l	45 mg/l	85 % minimum

Concentration Based Effluent Limits	
	Instantaneous Maximum
pH	Must be in the range of 6.0 to 9.0 standard units

Additionally, technology-based treatment requirements may be imposed on a case by case basis under Section 402(a)(1) of the Act, to the extent that EPA promulgated effluent limitations are inapplicable (i.e., the regulation allows the permit writer to consider the appropriate technology for the category or class of point sources and any unique factors relating to the applicant). (40 CFR Part 125.3(c)(2))

The minimum levels of effluent quality attainable by secondary treatment for Settleable Solids, as specified in the EPA Region IX Policy memo dated May 14, 1979, are listed below:

Concentration Based Effluent Limits		
	30-day Average	Daily Maximum
Settleable Solids	1 ml/l	2 ml/l

Therefore, effluent limits for BOD_5, TSS, pH, and Settleable Solids are established in the permit as stated above.

B. Water Quality-Based Effluent Limitations ("WQBELs")

Water quality-based effluent limitations, or WQBELS, are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard. (40 CFR 122.44(d)(1))

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity) and where appropriate, the dilution of the effluent in the receiving water. (40 CFR 122.44 (d) (1) (ii)).

EPA evaluated the reasonable potential to discharge toxic pollutants according to guidance provided in the *Technical Support Document for Water Quality-Based Toxics Control* (TSD) (Office of Water Enforcement and Permits, U.S. EPA, March 1991) and the *U.S. EPA NPDES Permit Writers Manual* (Office of Water, U.S. EPA, December 1996). These factors include:

1 Applicable standards, designated uses and impairments of receiving water
2 Dilution in the receiving water
3 Type of industry
4. History of compliance problems and toxic impacts
5. Existing data on toxic pollutants (reasonable potential analysis)

1. Applicable standards, designated uses and impairments of receiving water

The Tribe does not have approved water quality standards for discharges to waters located on the Reservation. However, the discharge of wastewater from the WWTP on the reservation flows to Forsythe Creek, for which the State of California has established water quality standards. Therefore, water quality standards applicable to the Forsythe Creek Hydrologic Sub Area are applicable to the discharge at the point where the discharge enters State waters. EPA has therefore applied water quality standards based on the Water Quality Control Plan for the North Coast Region ("Basin Plan") for the Forsythe Creek Hydrologic Sub Area in the permit. In order to be conservative, the permit establishes the water quality standards applicable at the State boundary directly to the discharge location of the wastewater treatment plant without the benefit of dilution, i.e., establishing "end-of-pipe" limits. The Basin Plan lists the following beneficial uses:

MUN Municipal and Domestic Supply
AGR Agricultural Supply
IND Industrial Service Supply
GWR Groundwater Recharge
NAV Navigation
REC-1 Water Contact Recreation
REC-2 Non-Contact Water Recreation
COMM Commercial and Sport Fishing
WARM Warm Freshwater Habitat
COLD Cold Freshwater Habitat
WILD Wildlife Habitat
RARE Rare, Threatened, or Endangered Species
MIGR Migration of Aquatic Organisms
SPWN Spawning, Reproduction, and/or Early Development
AQUA Aquaculture

The following are listed as potential beneficial uses:
PRO Industrial Process Supply
POW Hydropower Generation

The Forsythe Creek Hydrologic Sub Area and the Russian River at the upper Russian River Hydrological Area are currently listed in California's 2002 CWA Section for 303(d) List of Water Quality Limited Segment (approved by EPA July 2003) for sediment/siltation and temperature. TMDLs have not been developed yet for these impairments; the TMDL priority for sediment/siltation is medium, and the TMDL priority for temperature is low.

2. Dilution in the receiving water

Discharge from Outfall 001 to Forsythe Creek may have no natural flow during certain times of the year. Therefore, no dilution of the effluent has been considered in the development of water quality based effluent limits applicable to the discharge.

3. Type of industry

Typical pollutants of concern in untreated and treated domestic wastewater include ammonia, nitrate, oxygen demand, pathogens, temperature, pH, oil and grease, and solids. Chlorine and turbidity may also be of concern due to treatment plant operations.

4. History of compliance problems and toxic impacts

This is a new permit and therefore there are no inspection reports, data, or documentation of compliance history associated with discharge from the WWTP.

However, U.S. EPA has documented Clean Water Act compliance problems associated with the construction of the casino expansion, hotel and parking lot which will service the POTW. The Tribe completed a Tribal Environmental Impact Report (TEIR) in June 07. The EIR recognized potential impacts to surface waters from construction and stated that the Tribe will obtain a NPDES permit for construction, will develop a stormwater pollution prevention plan (SWPPP) and will implement erosion controls and sediment basins to control stormwater in accordance with EPA's Construction General Permit. (Section 4.7.3 of TEIR).

An inspection by U.S.EPA on January 15, 2008 and documented in a February 21, 2008 compliance letter to the Tribe found that construction had begun in October 2007 without permit coverage; that there was evidence of discharges to the Creek without permit authorization; and that erosion and sediment controls were inadequate to control sediment along Forsythe Creek. As a result of EPA' inspection and compliance assistance letter to the Tribe, the Tribe submitted a Notice of Intent for discharge on January 14, 2008 and received EPA General Permit coverage on January 21, 2008. (CAR100001). A written response to EPA's inspection report was requested by March 10, 2008 to document that measures had been taken to achieve compliance with the Construction General Permit. Since the Inspection, the Tribe's Notice of Intent was accepted by the EPA and a project number was issued; the Tribe's construction crew has replaced and maintained silt fencing around the project site; increased and improved soil stabilization throughout the project site; improved the implementation of the best management practices ("BMPs") through the use of site grading and other practices; and updated and added required and requested information to the Storm Water Pollution Prevention Plan ("SWPPP").

5. Existing data on toxic pollutants- Reasonable Potential Analysis

No existing data is available on toxic pollutants.

C. Rationale for Effluent Limits

EPA evaluated the typical pollutants expected to be present in the effluent and selected the most stringent of applicable technology-based standards or water quality-based effluent limitations. Where effluent concentrations of toxic parameters are unknown or are not reasonably expected to be discharged in concentration that have the reasonable potential to cause or contribute to water quality standards, EPA may establish monitoring requirements in the permit. Where monitoring is required, data will be re-evaluated and the permit may be re-opened to incorporate effluent limitations as necessary.

Flow

The Basin Plan includes a prohibition against discharge to the Russian River and its tributaries during the period May 15 through September 30 and all other periods when the waste discharge flow is greater than one percent of the receiving stream's flow. From the Basin Plan:

> **"WASTE DISCHARGE PROHIBITIONS**
> Section 13243 of the Porter-Cologne Water Quality Control Act authorizes the Regional Water Board - in a water quality control plan or in waste discharge requirements - to specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted.
>
> Under this authority and in order to achieve water quality objectives, protect present and future beneficial water uses, protect public health, and prevent nuisance, the Regional Water Board declares that point source waste discharges, except as stipulated by the Thermal Plan, the Ocean Plan, and the action plans and policies contained in the Point Source Measures section of this Water Quality Control Plan, are prohibited in the following locations in the Region:
> .....
> **North Coastal Basin**
> .....
> 4. The Russian River and its tributaries during the period of May 15 through September 30 and during all other periods when the waste discharge flow is greater than one percent of the receiving stream's flow as set forth in NPDES permits. In addition, the discharge of municipal waste during October 1 through May 14 shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger, and shall meet a median coliform level of 2.2 mpn/100 ml. 2
>
> [2] For dischargers not in compliance with the waste discharge rate limitation and/or advanced wastewater treatment, time schedules shall be set forth in NPDES permit updates for each discharger. In addition, each discharger not in compliance shall report to the Regional Water Board on progress towards compliance on an annual basis."
> .....

Additionally, the Basin Plan allows exceptions for cause to the one-percent discharge rate restriction. Exceptions must be in accordance with the following exception criteria:

> "A. The wastewater treatment plant shall be reliable. Reliability shall be demonstrated through analysis of the features of the facility including, but not limited to, system redundancy, proper operation and maintenance, and backup storage capacity to prevent the threat of pollution or nuisance.

B. The discharge of waste shall be limited to rates and constituent levels which protect the beneficial uses of the receiving waters. Protection shall be demonstrated through analysis of all the beneficial uses of the receiving waters. For receiving waters which support domestic water supply (MUN) and water contact recreation (REC1), analysis shall include expected normal and extreme weather conditions within the discharge period, including estimates of instantaneous and long-term minimum, average, and maximum discharge flows and percent dilution in receiving waters. The analysis shall evaluate and address cumulative effects of all discharges, including point and nonpoint source contributions, both in existence and reasonably foreseeable. For receiving waters which support MUN, the Regional Water Board shall consider the California Department of Health Services evaluation of compliance with the Surface Water Filtration and Disinfection regulations contained in Section 64650 through 64666, Chapter 17, Title 22 of the California Code of Regulations. Demonstration of protection of beneficial uses shall include consultation with the California Department of Fish and Game regarding compliance with the California Endangered Species Act.

C. The exception shall be limited to that increment of wastewater which remains after reasonable alternatives for reclamation have been addressed.

D. The exception shall comply with State Board resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California", and the federal regulations covering antidegradation (40 CFR §1 31.12).

E. There shall be no discharge of waste during the period May 15 through September 30."

The permit prohibits the discharge of effluent to the Russian River and its tributaries from May 15 through September 30 each year. Additionally, during the period from October 1 through May 14, the permit limits the discharge of effluent to be less than one percent of the natural flow of the Russian River and its tributaries. The permit establishes the point of compliance to be measured at the nearest available USGS gaging station, located approximately 7 miles downstream in the Russian River at Ukiah until the hydraulic study can be completed. The maximum flow treated in the WWTP is 0.060 mgd, and the amount of flow to be discharged ill be the treated effluent minus effluent use for on-site re-use, irrigation, and subsurface discharge, and will therefore be less than 0.060 mgd.

There are no USGS gaging stations located on Forsythe Creek, and therefore the permittee must assess the flow volumes of Forsythe Creek and its relation to the discharge. The facility has not been constructed yet, and therefore the permit includes the requirement to conduct a hydraulic assessment of Forsythe Creek. Additionally, EPA believes the facility may be able to meet all of the five criteria to qualify for the exception to the one percent discharge restriction, as described below. Because the facility has not yet been constructed and there is no existing data for the facility operation, EPA will make this determination when data is available.

With respect to each of the five criteria:
Reliability:
EPA considers the WWTP will be reliable based on proposed design. The treatment system, consisting of an immersed membrane bioreactor treatment, is designed to obtain very high quality effluent. The WWTP will be designed for redundancy so that all tanks have level

sensors, emergency flow shutoff valves, and the system is designed so that if pumps or shutoff valve fails, the wastewater will gravity flow into the next tank rather than spill. The Tribe has on-site storage for effluent produced by the treatment plant, which could be routed back into the treatment plant influent for further treatment, should it be required. The Tribe is also planning to expand on-site storage facilities, as detailed in the Engineering Report supporting the NPDES permit application. The Tribe will have approximately 90,000 gallons of emergency storage on site.

Protects Beneficial Uses:
The permit establishes effluent limitations and monitoring requirements to meet all designated uses, including MUN and REC1, with no allowance for dilution of the wastewater effluent. Although regulations require that water quality standards must be met at the point the discharge enters waters of the State of California, the permit establishes compliance at the point of discharge to the waterbody on tribal lands prior to reaching waters within the State of California, with no allowance for dilution. Therefore, water quality standards are met at the discharge ("end of pipe") location prior to discharge to the receiving water under both normal and extreme conditions and under all flow regimes. For purposes of this analysis, EPA has analyzed the impacts of the discharge at the maximum authorized flow rate and volume during dry weather conditions.

EPA looked at potential cumulative impacts the discharge will have on the receiving waterbody. Forsythe Creek is listed as impaired for sediment/siltation and temperature. Impairments are related to non-point sources of pollution including: Flow Regulation/Modification, Habitat Modification, Hydromodification, Nonpoint Source, Removal of Riparian Vegetation, Streambank Modification/Destabilization, and Upstream Impoundment. There are no other point source discharges to Forsythe Creek.

EPA has concluded that the permit establishes effluent limits sufficient to protect the beneficial uses of the receiving waters, both independently and as related to the cumulative impacts on the stream. Regarding sediment, the effluent is expected to contain less sediment than the receiving water. The permit establishes average monthly limits for total suspended solids of 10 mg/L, and for Settleable Solids, a limit of 0.1 ml/L, and a turbidity limit of 2 NTUs. The wastewater will be treated through an advanced membrane system, which has demonstrated results of consisting achieving non-detect for sediment concentration at other, similarly operated, tribal facilities. Therefore, the permit is not expected to have a detrimental impact on sediment concentrations in the stream

Regarding temperature, the permit establishes the following limitations applicable to the receiving waters:

a. When the receiving water is below 58^0 F, the discharge shall cause an increase of no more than 4^0 F in the receiving water, and shall not increase the temperature of the receiving water beyond 59^0 F. No instantaneous increase in receiving water temperature shall exceed 4^0 F at any time.

b. When the receiving water is between 59^0 F and 67^0 F, the discharge shall cause an increase of no more than 1^0 F in the receiving water. No instantaneous increase in receiving water temperature shall exceed 1^0 F at any time.

c. When the receiving water is above 68^0 F, the discharge shall not cause an increase in temperature of the receiving water.

The permit requires weekly monitoring for temperature to ensure that the wastewater discharge does not adversely impact Forsythe Creek. As noted above, no discharge will be allowed during the critical time period of May 15 to September 30 each year to prevent temperature impacts during critical low-flow periods.

Additionally, the wastewater will be treated through an advanced membrane system, which has demonstrated results of consisting achieving non-detect for priority pollutants at similarly operated, tribal facilities. EPA will confirm that the new WWTP is achieving high pollutant removal efficiency by requiring a complete priority pollutant scan and that whole effluent toxicity testing be conducted on the effluent. Based on results, EPA may re-evaluate reasonable potential and the need to establish additional effluent limitations in the permit.

Therefore, EPA has concluded that the discharge will not detectably increase the cumulative impacts of the Creek. A biological assessment has been prepared for consultation with National Marine Fisheries Service and the Fish and Wildlife Service.

Must Maximize Reclamation:
The Tribe will continue to utilize a large portion of treated wastewater effluent for re-use and recycle on-site through use in toilet flushing and on-site landscape irrigation. Subsurface disposal will be utilized on 1.7 acres of land for final effluent disposal. The Tribe will continue to utilize all available areas for landscape irrigation and subsurface disposal, minimizing discharge to Forsythe Creek to the extent possible. The permit requires the Tribe to maximize the available re-use, irrigation, and subsurface disposal, thereby limiting the discharge to that increment which remains after reasonable alternatives for reclamation have been addressed.

Meet Antidegredation Requirements:
The permit meets federal requirements for anti-degradation contained in 40 CFR Part 131.12 and State Board Resolution 68-16 requiring high quality waters to be maintained. As explained above, the discharge will meet all water quality standards to protect the beneficial uses of the receiving water without allowing for dilution. The discharge will meet all applicable technology based limits based on best practicable control technologies and is not expected to result in a detrimental affect to the receiving water. As discussed above, the proposed discharge will protect all beneficial uses. Moreover, given the small volume of this discharge and the high level of treatment that will be provided, EPA does not anticipate that there will be any detectable degradation to the quality of the receiving waters as a result of this discharge. The permit establishes effluent limitations for all permits for which there is a reasonable potential to cause or contribute to an exceedance of water quality standards, and contains monitoring requirements for all priority pollutants. The permit also requires monitoring for whole effluent toxicity, which measures the cumulative impact of any pollutants that may be present in the treated wastewater on aquatic organisms. The whole effluent toxicity tests will be conducted at levels that include 100% effluent, thereby demonstrating any adverse affects that may be present in the discharge. Therefore, EPA does not expect any detectable degradation to occur as a result of the discharge.

Prohibition on Discharge May 15-September 30

The permit contains a prohibition of discharge to the Russian River and its tributaries from May 15 through September 30 of each year.

BOD_5

The Basin Plan contains the requirement that, in addition to flow restrictions, "the discharge of municipal waste during October 1 through May 14 shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger..."

EPA is interpreting the Basin Plan's requirement to discharge "advanced treated wastewater" to require water quality discharge restrictions for TSS and BOD_5 more stringent than technology-based secondary treatment standards. Therefore, EPA has incorporated water quality based standards for BOD_5 more stringent than technology-based standards that are consistent with the discharge requirements for other municipal wastewater discharges in the north coast regional area. The permit therefore establishes an average monthly limit of 10 mg/L, an average weekly maximum of 15 mg/L, and a daily maximum limit of 20 mg/L. These limits are more stringent than technology-based standards and have been incorporated into the permit.

Under 40 CFR Section 122.45(f), mass limits are also required for BOD_5 and TSS. Based on the design flow, the mass based limits are based on the following calculations:

Average Monthly Mass Limits for BOD:

Design Flow (daily average)	Average Monthly Concentration Limit	Conversion factor	Average Monthly Mass Limit
0.045 mgd	10 mg/l	8.345	3.7 lbs/day

Average Weekly Mass Limits for BOD:

Design Flow (daily maximum)	Average Weekly Concentration Limit	Conversion factor	Weekly Average Mass Limit
0.060 mgd	15 mg/l	8.345	7.5 lbs/day

Total Suspended Solids (TSS)

The Forsythe Creek Hydrologic Sub Area and the Russian River at the upper Russian River Hydrological Area are currently listed in the 2002 CWA Section for 303(d) List of Water Quality Limited Segment (approved by EPA July 2003) for sediment/siltation and temperature. TMDLs have not been developed yet for these impairments.

In the absence of a TMDL, EPA may not approve a new discharge that will result in the contribution of additional sediment to an already impaired waterbody. Therefore, EPA concluded that a water quality based effluent limit must be developed for TSS which allows "no net loading" of sediment to be contributed to the receiving water. A "no net loading" requirement may be met by reducing the effluent concentration below detectable levels through

source control and treatment or by reducing loads elsewhere in the watershed by an amount at least equivalent to the amount being discharged (in equivalent bioavailability) through an approved offset program (e.g., "trading").

EPA concluded that the permit must allow "no net loading" of sediment in order to ensure that the discharge does not contribute to a violation of the water quality standards. In accordance with the Basin Plan, no wastewater will be discharged during the period from May 15th through September 1st. Therefore, no sediment increases will result from the discharge during the summer months. During the winter months, EPA is establishing an effluent limit for TSS of 5 mg/L to ensure the minimum feasible net loading of sediment results from the discharge.

The Russian River is listed as an impaired water body for sediment pursuant to Section 303(d) of the Clean Water Act. A Total Maximum Daily Load has not been established to address sediment loadings. Aspects of the sediment impairing the Russian River include settleable solids, suspended solids, and turbidity. The impact of settleable solids results when they collect on the bottom of a water body over time, making them a persistent or accumulative constituent. The impact of suspended solids and turbidity, by contrast, results from their concentration in the water column. The discharge is not expected to contain sediment (i.e., settleable solids, suspended solids, and turbidity) at levels that will cause, have the reasonable potential to cause, or contribute to increases in sediment levels in the Russian River. This finding is based in part on the advanced level of treatment proposed, which removes all settleable solids and reduces total suspended solids and turbidity to very low levels. The summer discharge prohibition, the one-percent flow limitation for winter discharge, and the discharge standards for settleable solids, suspended solids, and turbidity also support this finding.

Under 40 CFR Section 122.45(f), mass limits are also required for BOD_5 and TSS. Based on the design flow, the mass based limits are based on the following calculations:

Average Monthly Mass Limits for TSS:

Design Flow (daily average)	Average Monthly Concentration Limit	Conversion factor	Weekly Average Mass Limit
0.045 mgd	< 5 mg/l	8.345	< 1.9 lbs/day

Average Weekly Mass Limits for TSS:

Design Flow (daily maximum)	Average Weekly Concentration Limit	Conversion factor	Weekly Average Mass Limit
0.060 mgd	10 mg/l	8.345	< 1.9 lbs/day

Ammonia

Treated and untreated domestic wastewater may contain levels of ammonia that are toxic to aquatic organisms. Ammonia is converted to nitrate during biological nitrification process, and then nitrate is converted to nitrogen gas through biological denitrification process. USEPA's Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life recommends acute and chronic criteria that are pH and temperature dependent. Due to the potential for ammonia to be present in sanitary wastewater at toxic levels and due to the conversion of ammonia to nitrate, effluent limitations are established for ammonia.

Nitrate

Treated and untreated domestic wastewater may contain levels of ammonia that are toxic to aquatic organisms. Ammonia is converted to nitrate during biological nitrification process, and then nitrate is converted to nitrogen gas through biological denitrification process.

The primary Maximum Contaminant Level (MCL) for protection of MUN is 10 mg/L and the USEPA Ambient Water Quality Criteria for the Protection of Human Health is also 10 mg/L for non-cancer effects. Due to the potential for ammonia to be present in sanitary wastewater and due to the conversion of ammonia to nitrate, effluent limitations are established for nitrate (measured as N).

Total Dissolved Solids/Electrical Conductivity

To protect the beneficial uses of water for agriculture uses, studies by the United Nations have recommended a goal of 700 umhos/cm for electrical conductivity (EC). The California Department of Health Services has recommended an Secondary Maximum Contaminant Level (SMCL) for EC of 900 umhos/cm, with an upper level of 1600 umhos/cm and a short term level of 2200 umhos/cm.

Due to lack of discharge data, it is unknown at this time if the discharge from the new WWTP will have the reasonable potential to cause or contribute to an exceedance of water quality standards. Therefore, the draft permit establishes monthly monitoring requirements for EC and TDS to assess reasonable potential.

pH:

The basin plan requires that a pH of 6.5-8.5 must be met at all times and that changes in normal ambient pH level not exceed 0.5 units. This is more stringent than technology based requirements for pH, therefore, this limit is included in the permit.

Total Coliform bacteria:

Based on the nature of WWTP effluent, there is a reasonable potential for coliform bacteria to violate water quality standards. Based on REC-1 Beneficial Use, total coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed 200/100 ml, nor shall more than 10% of the total number of samples during any 30-day period exceed 400/100 ml - 10% of samples for 30-day period. Based on MUN standards, total coliform must not exceed 2.2 /100mL in a 7 day average. Since the MUN is the most stringent standard, this limit is included in the permit.

Additionally, the basin plan states that the discharge of municipal waste during October 1 through May 14 shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger, and shall meet a median coliform level of 2.2 mpn/100 ml. The permit requirements based on MUN are consistent with this requirement.

The effluent is designed to meet California (Title 22) disinfection standards for the re-use of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered and that the effluent total coliform levels not exceed 2.2 MPN/100 ml as a 7-day median.

Total Residual Chlorine

Chlorine will be used to disinfect WWTP effluent intended for discharge, therefore there is a reasonable potential for chlorine residual to be present and the permit contains effluent limits for chlorine residual.

Dissolved oxygen

The basin plan contains the requirement that dissolved oxygen not be reduced below 7.0 mg/L. Therefore, this is included in the permit.

Oil and Grease

Treated and untreated domestic wastewater may contain levels of oil and grease which may be toxic to aquatic organisms. There are no numeric water quality standards for oil and grease (only narrative standards which have been incorporated into the permit). Therefore, an effluent limit based on Best Professional Judgment is being established. Therefore, this is included in the permit.

Toxicity:

The basin plan includes a narrative objective for toxicity that requires that: All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.

Therefore, the permit requires monitoring for toxicity based on Whole Effluent Toxicity Procedures to assess the reasonable potential of the discharge to have toxic effects on aquatic organisms.

Temperature:

The Forsythe Creek Hydrologic Sub Area and the Russian River at the upper Russian River Hydrological Area are currently listed in California's 2002 CWA Section for 303(d) List of Water Quality Limited Segment (approved by EPA July 2003) for sediment/siltation and temperature. TMDLs have not been developed yet for these impairments.

In the absence of a TMDL, EPA may not approve a new discharge that will result in the increase of temperature to an already impaired waterbody. Therefore, EPA concluded that a water quality based effluent limit must be developed for temperature which allows "no net loading" of temperature to be contributed to the receiving water. A "no net loading" requirement may be met by reducing the effluent concentration below detectable levels through source control and treatment or by reducing loads elsewhere in the watershed by an amount at least equivalent to the amount being discharged (in equivalent bioavailability) through an approved offset program (e.g., "trading").

In accordance with the Basin Plan, no wastewater will be discharged during the period from May 15th through September 1st. Therefore, no temperature increases will result from the discharge during the time periods when anadromous species have the greatest sensitivity to temperature. During the winter months when flows increase, the permittee will be allowed to discharge wastewater within the limits allowed by the basin plan.

Priority Pollutants:

Since this is a new discharger, no data is available for priority pollutants. Due to the nature of the wastewater and the high level of treatment provided, no toxic pollutants are expected to be present in the discharge in toxic amounts. However, the permit is requiring that the discharger conduct a comprehensive screening test for the Priority Toxic Pollutants listed for the California Toxics Rule in the Code of Federal Regulations (CFR) at 40 CFR Section 131.38 within 90 days of discharge. If an exceedance of a criteria, or a reasonable potential for exceedance of a criteria is detected the permit may be re-opened to require appropriate limits.

E. Antidegradation Policy

EPA's antidegradation policy at 40 CFR 131.12 and the Basin Plan require that existing water uses and the level of water quality necessary to protect the existing uses be maintained.

As described in this document, the permit establishes effluent limits and monitoring requirements to ensure that all applicable water quality standards are met. The permit does not include a mixing zone, therefore these limits will apply at the end of pipe without consideration of dilution in the receiving water. Although no priority pollutants are expected to be present in the effluent due to the sources of wastewater and the high level of treatment provided, a priority pollutant scan and whole effluent toxicity test will been conducted of the effluent to ensure compliance. Although the waterbody is listed as impaired for total suspended solids, the permit establishes a condition of no net loading of TSS, establishing the effluent limit at non-detect levels.

Therefore, due to the low levels of toxic pollutants present in the effluent, high level of treatment being obtained, and water quality based effluent limitations, it is not expected that the discharge will adversely affect receiving water bodies.

VII. NARRATIVE WATER QUALITY-BASED EFFLUENT LIMITS

The Basin Plan contains narrative water quality standards applicable to the receiving water. Therefore, the permit incorporates applicable narrative water quality standards.

VIII. MONITORING AND REPORTING REQUIREMENTS

The permit requires the permittee to conduct monitoring for all pollutants or parameters where effluent limits have been established at the minimum frequency specified. Additionally, where effluent concentrations of toxic parameters are unknown or where data is insufficient to

determine reasonable potential, monitoring may be required for pollutants or parameters where effluent limits have not been established.

A. Effluent Monitoring and Reporting

The permittee shall conduct effluent monitoring to evaluate compliance with the proposed permit conditions. The permittee shall perform all monitoring, sampling and analyses in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the proposed permit. All monitoring data shall be reported on monthly DMR forms and submitted quarterly as specified in the proposed permit.

B. Priority Toxic Pollutants Scan

A Priority Toxics Pollutants scan shall be conducted during the first 90 days of discharge to ensure that the discharge does not contain toxic pollutants in concentrations that may cause a violation of water quality standards. The permittee shall perform all effluent sampling and analyses for the priority pollutants scan in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the proposed permit or EPA. 40 CFR 131.36 provides a complete list of Priority Toxic Pollutants.

C. Whole Effluent Toxicity Testing

The permit establishes tests for toxicity for chronic toxicity.

Chronic toxicity testing evaluates reduced growth/reproduction at 100 percent effluent. Chronic toxicity is to be reported based on the No Observed Effect Concentration (NOEC). The permittee shall conduct short-term tests with the water flea, Ceriodaphnia dubia (survival and reproduction test), the fathead minnow, Pimephales promelas (larval survival and growth test) and the green alga, Raphidocelis subcapitata (growth test). The presence of chronic toxicity shall be estimated as specified by the methods in the 40 CFR Part 136 as amended on November 19, 2002.

IX. SPECIAL CONDITIONS

A. Erosion Control

The Permittee shall implement best management practices to safeguard against erosion from the discharge and prevent adverse impact to receiving waters.

B. Surface Water Discharge Operations Plan and Report

The permit requires the Tribe to develop a Surface Water Discharge Operations Plan. Specifically, this requires the Tribe to consider impacts to surface waters during start up and shut down of the seasonal discharge.

During a site visit to the facility during the dry period (mid July), it was observed that Forsythe Creek contained a very small volume of flow which appears to be maintained throughout many dry seasons. Small fish were observed in the stream, where were unidentified but were around 2-3 inches in length. The Tribe has documented the presence of juvenile steelhead and coho in the vicinity of the discharge location during various snorkel and electrofish surveys of the Creek.

C Special Study to meet discharge rate restriction of 100:1

The permit includes requirements for a special study to analyze the impacts the flow will have on meeting the 1% flow restriction. The discharger is required to conduct a hydraulic study to determine the ratio of wastewater to be discharged to the volume of flow in Forsythe Creek in order to ensure compliance with the Basin Plan discharge rate restrictions and must submit for EPA's approval a report describing the findings and conclusions of the hydraulic study. The hydraulic study shall include the methodology for measuring flow in Forsythe Creek which shall be incorporated into the Surface Water Discharge Operations Plan.

D. Re-use Standards

The Tribe will re-use wastewater for on-site irrigation and non-potable water uses such as toilet flushing. Therefore, the Tribe has agreed to follow the reclamation criteria established by the California Department of Heath Services to protect public health and the environment. The California Department of Health Services (DHS) has established statewide reclamation criteria in Chapter 3, Division 4, Title 22, California Code of Regulations (CCR), Section 60304, et seq. (Hereafter Title 22) for the use of reclaimed water. These requirements implement the reclamation criteria in Title 22.

Although the Tribe is not required to comply with these State criteria for wastewater reused on Tribal lands, the Tribe is currently voluntarily adhering to these criteria for the re-use of its wastewater. These terms are therefore included in the permit.

E. Pretreatment

As described above, there are no industrial facilities discharging to the WWTP. Therefore, there are no pretreatment requirements in this permit.

F. Biosolids

Standard requirements for the monitoring, reporting, recordkeeping, and handling of biosolids, as minimum treatment requirements for biosolids according to 40 CFR Part 503 are incorporated into the permit.

G. Capacity Attainment and Planning

The permit requires that a written report be filed within ninety (90) days if the average dry-weather wastewater treatment flow for any month exceeds 90 percent of the annual dry weather design capacity of the waste treatment and/or disposal facilities.

H. Development of an Initial Investigation TRE Workplan for Whole Effluent Toxicity

In the event effluent toxicity is triggered from WET test results, the permit requires the permittee to develop and implement a Toxics Reduction Evaluation ("TRE") Workplan. For acute toxicity, unacceptable effluent toxicity is found when "Fail" is determined, as indicated by a statistically significant difference between a test sample of 100 percent effluent and a control using a t-test. For chronic toxicity, unacceptable effluent toxicity is found in a single test result greater than 1.6 TU_c, or when any one or more monthly test results in a calculated median value greater than 1.0 TU_c. The draft permit also requires additional toxicity testing if a chronic toxicity monitoring trigger is exceeded. Within 90 days of the permit effective date, the

permittee shall prepare and submit a copy of their Initial Investigation TRE Workplan (1-2 pages) for acute and chronic toxicity to EPA and ASEPA for review.

X. OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. Impact to Threatened and Endangered Species

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. § 1536) requires federal agencies to ensure that any action authorized, funded, or carried out by the federal agency does not jeopardize the continued existence of a listed or candidate species, or result in the destruction or adverse modification of its habitat.

EPA has completed a draft Biological Evaluation (BE) for the proposed permit. EPA has determined that the proposed permit may affect, but is not likely to adversely affect, the endangered Central California Coast coho (*Oncorhynchus kisutch*), the threatened chinook (*oncorhynchus tshawytscha*), and the threatened Central California coastal steelhead (*Oncorhynchus mykiss).* Therefore, EPA initiated informal consultation with NOAA National Marine Fisheries Service. NOAA did not provide an objection or comments on the proposed permit.

B. Impact to Coastal Zones

The Coastal Zone Management Act ("CZMA") requires that Federal activities and licenses, including Federally permitted activities, must be consistent with an approved state Coastal Management Plan (CZMA Sections 307(c)(1) through (3)). Section 307(c) of the CZMA and implementing regulations at 40 CFR 930 prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the proposed activity complies with the State (or Territory) Coastal Zone Management program, and the State (or Territory) or its designated agency concurs with the certification.

The proposed permit does not affect land or water use in the coastal zone.

C. Impact to Essential Fish Habitat

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act ("MSA") set forth a number of new mandates for the National Marine Fisheries Service, regional fishery management councils and other federal agencies to identify and protect important marine and anadromous fish species and habitat. The MSA requires Federal agencies to make a determination on Federal actions that may adversely impact Essential Fish Habitat ("EFH").

The proposed permit contains technology-based effluent limits and numerical and narrative water quality-based effluent limits as necessary for the protection of applicable aquatic life uses. The proposed permit does not directly discharge to areas of essential fish habitat. Therefore, EPA has determined that the proposed permit will not adversely affect essential fish habitat.

D. Impact to National Historic Properties

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effect of their undertakings on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. Pursuant to the NHPA and 36 CFR § 800.3(a)(1), EPA is making a determination that issuing this proposed NPDES permit does not

have the potential to affect any historic properties or cultural properties. As a result, Section 106 does not require EPA to undertake additional consulting on this permit issuance.

XI. STANDARD CONDITIONS

A. Reopener Provision

In accordance with 40 CFR 122 and 124, this permit may be modified by EPA to include effluent limits, monitoring, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.

B. Standard Provisions

The permit requires the permittee to comply with EPA Region IX Standard Federal NPDES Permit Conditions, dated July 1, 2001.

XII. ADMINISTRATIVE INFORMATION

A. Public Notice (40 CFR 124.10)

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft NPDES permit or other significant action with respect to an NPDES permit or application.

B. Public Comment Period (40 CFR 124.10)

Notice of the draft permit will be placed in a daily or weekly newspaper within the area affected by the facility or activity, with a minimum of 30 days provided for interested parties to respond in writing to EPA. After the closing of the public comment period, EPA is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

C. Public Hearing (40 CFR 124.12(c))

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if EPA determines there is a significant amount of interest expressed during the 30-day public comment period or when it is necessary to clarify the issues involved in the permit decision.

D. Water Quality Certification Requirements (40 CFR 124.53 and 124.54)

For States, Territories, or Tribes with EPA approved water quality standards, EPA is requesting certification from the affected State, Territory, or Tribe that the proposed permit will meet all applicable water quality standards. Certification under section 401 of the CWA shall be in writing and shall include the conditions necessary to assure compliance with referenced applicable provisions of sections 208(e), 301, 302, 303, 306, and 307 of the CWA and appropriate requirements of Territory law.

XIII. CONTACT INFORMATION

Comments submittals and additional information relating to this permit may be directed to:

John Tinger, (415) 972-3518
Tinger.John@EPA.gov

EPA Region IX
75 Hawthorne Street (WTR-5)
San Francisco, California 94105

XIV. REFERENCES

EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control*. Prepared by EPA, Office of Water Enforcement and Permits, in March 1991. EPA/505/2-90-001.

EPA. 1996. *Regions IX & X Guidance for Implementing Whole Effluent Toxicity Testing Programs*, Interim Final, May 31. 1996.

EPA. 2002a. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* - Fifth Edition. Office of Water, EPA. EPA-821-R-02-012.

EPA. 2002b. *National Recommended Water Quality Criteria*. Office of Water, EPA. EPA-822-R-02-047.

EPA. 1996. *U.S. EPA NPDES Basic Permit Writers Manual*. EPA. EPA-833-B-96-003.

NPDES Permit Application and Engineering Report for the Coyote Valley Shodakai Casino Project, Prepared by Hydroscience Engineers, November 2007.

Final Tribal Environmental Impact Report for the Coyote Valley Band of Pomo Indians Casino Project, June 2007

Draft Tribal Environmental Impact Report for the Coyote Valley Band of Pomo Indians Casino Project, December 2006

Engineers Report Water Balance for Coyote Valley WWTP. Provided via email by Curtis Lam, Hydroscience Engineers.

Forsythe Creek Characterization & Assessment. Analytical Environmental Services, for Coyote Valley Band of Pomo Indians Casino Project. May, 2008.